MAJOR TITLE 2

TOURNAMENT LEADER

MANUAL

****

CONTENTS

1. P.C.BOARD SPECIFICATIONS

POWER SUPPLY:

VOLTAGE   5V ± 5%
           12V ± 10%

AMPERE   5V MAX. 5A
           12V MAX. 1A

MONITOR INTERFACE:

VIDEO SIGNALS · · · TTL POSITIVE
SYNC SIGNALS · · · TTL NEGATIVE (COMPOSITE SYNC)
HORIZONTAL FREQUENCY · · · 15.723KHz
H.PERIOD   · · · 63.6 μ s
H.BLANK   · · · 15.6 μ s
H.SYNC PULSE   · · · 6.0 μ s
VERTICAL FREQUENCY   · · · 60.0Hz
V.PERIOD   · · · 16.663ms
V.BLANK   · · · 1.40ms
V.SYNC PULSE   · · · 318 μ s

| TOLERABLE:	WHILE OPERATING	IN STORAGE
TEMPERATURE	0 TO 50 ℃	-5 TO 60 ℃
RELATIVE HUMIDITY	20 TO 70%	NO MORE THAN 80%
VIBRATION	NO MORE THAN 0.5G	NO MORE THAN 1.0G
DROPPING DISTANCE	NO MORE THAN 0 cm	(When packed) NO MORE THAN 50 cm

2. DIP SWITCHES

DIP SW1

|					SW 1				
		1	2	3	4	5	6	7	8
Given holes	2	OFF							
(Stroke play)	1	ON							
Given holes (Match play, Skins game)	2		OFF						
	1		ON						
Difficulty	NORMAL			OFF					
	HARD			ON					
Control panel	2 Joysticks					OFF			
(See below)	4 Joysticks					ON			
Any button	NO						OFF		
starts game	YES						ON		
Sound in attracting mode	NO							OFF	
	YES							ON	
Diagnostic test	NO								OFF
	YES								ON

* CABINET(DIP 2-2) & CONTROL PANEL(DIP 1-5)

☆ One side(Upright type): 2 joysticks   ☆ One side(Upright type):4 joysticks
   DIP 2-2·OFF, 1-5·OFF   DIP 2-2·OFF, 1-5·ON
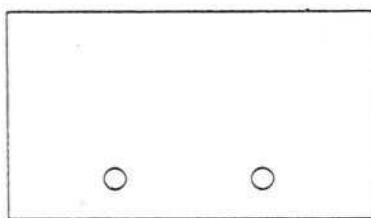
    1P   2P
    3P   4P

    1P   2P   3P   4P

☆ Both sides(Table type): 2 joysticks   ☆ Both sides(Table type):4 joysticks
   DIP 2-2·ON, 1-5·OFF   DIP 2-2·ON, 1-5·ON
   2P·4P   3P ·   4P
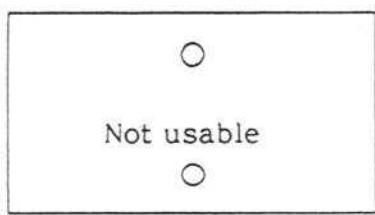
Not usable
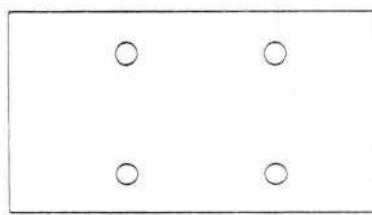
    1P·3P   1P   2P

※ The game is not programmed to be played with 1 joystick only on the control panel.

DIP SW2

			SW 2							
			1	2	3	4	5	6	7 .	8
FLIP PICTURE	NO		OFF							
FLIP PICTURE	YES		ON							
CABINET TYPE	UPRIGHT			OFF						
CABINET TYPE	TABLE			ON						
COIN CHUTES	SHARED				OFF					
COIN CHUTES	SEPARATE				ON					
COIN MODE — MODE 1		1 COIN 1 PLAY				OFF	OFF	OFF	OFF	OFF
		2 COINS 1 PLAY				OFF	ON	OFF	OFF	OFF
		3 COINS 1 PLAY				OFF	OFF	ON	OFF	OFF
		4 COINS 1 PLAY				OFF	ON	ON	OFF	OFF
		5 COINS 1 PLAY				OFF	OFF	OFF	ON	OFF
		6 COINS 1 PLAY				OFF	ON	OFF	ON	OFF
		1 COIN 2 PLAYS				OFF	OFF	ON	ON	OFF
		1 COIN 3 PLAYS				OFF	ON	ON	ON	OFF
		1 COIN 4 PLAYS				OFF	OFF	OFF	OFF	ON
		1 COIN 5 PLAYS				OFF	ON	OFF	OFF	ON
		1 COIN 6 PLAYS				OFF	OFF	ON	OFF	ON
		2 COINS 3 PLAYS				OFF	ON	ON	OFF	ON
		3 COINS 2 PLAYS				OFF	OFF	OFF	ON	ON
		4 COINS 3 PLAYS				OFF	ON	OFF	ON	ON
		1COIN CONTINUE				OFF	OFF	ON	ON	ON
		FREE PLAY				OFF	ON	ON	ON	ON
COIN MODE — MODE 2	* A	1 COIN 1 PLAY				ON	OFF	OFF		
		2 COINS 1 PLAY				ON	ON	OFF		
		3 COINS 1 PLAY				ON	OFF	ON		
		5 COINS 1 PLAY				ON	ON	ON		
	** B	1 COIN 2 PLAYS				ON			OFF	OFF
		1 COINS 3 PLAYS				ON			ON	OFF
		1 COINS 5 PLAYS				ON			OFF	ON
		1 COINS 6 PLAYS				ON			ON	ON

* COIN CHUTE A   ** COIN CHUTE B

- Please turn off the power switch before changing the DIP SW setting, or the change may not take effect.
- Continue Coin is the mode which starts the game with 2 coins, but continues it with 1 coin alone. When this mode is set, no other coin modes can be set.

CN 5

1	GROUND
2	3P. RIGHT
3	3P. LEFT
4	3P. DOWN
5	3P. UP
6	3P. START/COIN
7	
8	3P. SW B (MODE SELECTION)
9	3P. SW A (SHOT)

CN 4

1	GROUND
2	4P. RIGHT
3	4P. LEFT
4	4P. DOWN
5	4P. UP
6	4P. START/COIN
7	
8	4P. SW B (MODE SELECTION)
9	4P. SW A (SHOT)

※ Use No.6 pin of connector CN4 and CN5 as START SW when Dip Switch 2-3 is turned OFF, and use it as COIN SW when Dip Switch 2-3 is turned ON.

※ Use horisontally positioned CRT monitor, and 2-WAY joysticks, each with two push buttons.

4. DIAGNOSTIC TEST

As soon as No.8 of DIP Switch 1 is turned "ON" and the power switch is turned on, RAM·ROM test starts. When the test result appears on the screen, program is ready for the test mode selection.
To finish the test mode, turn off No. 8 of DIP Switch 1 and power switch.
※ Use 1P joystick, buttons A and B in the test mode.

1) Test Procedures

```
           ( START )
              │
    ┌──────────────────────┐
    │ TURN ON 8 OF DIP SW1 │
    └──────────────────────┘
              │
    ┌──────────────────────┐
    │ TURN ON POWER SWITCH │
    └──────────────────────┘
              │
    ┌──────────────────────┐
    │  RAM·ROM TEST STARTS │
    └──────────────────────┘
              │
         < RAM·ROM OK? > ──YES──┐
              │ NO              │
              │                 │
         < RETEST? > ──NO──────┐│
              │ YES            ││
    ┌──────────────────────┐   ││
    │  PRESS BUTTON A .     │   ││
    └──────────────────────┘   ││
```

```
    ┌──────────────────────┐
    │ TEST ITEMS ARE       │
    │ DISPLAYED            │
    ├──────────────────────┤
    │ SELECT TEST ITEM     │
    │ BY JOYSTICK          │
    ├──────────────────────┤
    │ PRESS BUTTON A       │
    ├──────────────────────┤
    │ TEST STARTS          │
    └──────────────────────┘
              │
    ┌──────────────────────┐
    │ PRESS BUTTONS        │
    │ A AND B              │
    └──────────────────────┘
              │
         < END TESTS? > ──NO──┐
              │ YES           │
    ┌──────────────────────┐  │
    │ TURN OFF 8 OF DIP SW1 │  │
    ├──────────────────────┤  │
    │ TURN OFF POWER SW    │  │
    └──────────────────────┘
              │
          ( FINISH )
```
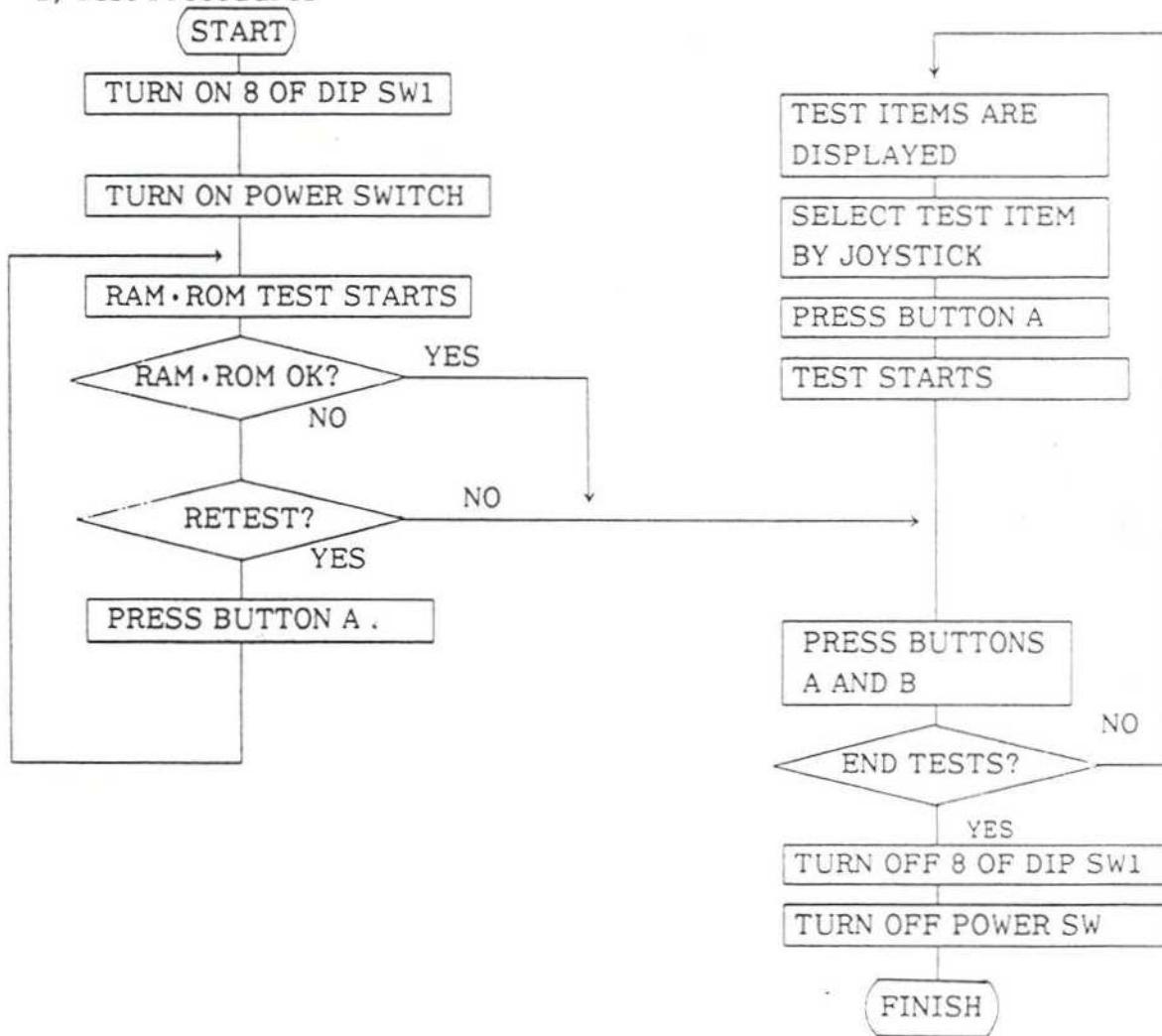
2) RAM and ROM Test

Although the picture does not appear on the screen and only various
patterns appear on it for a while after turning on the power switch, RAMs
for the picture are being tested during this time. RAM and ROM Test is
carried out everytime power switch is turned on.
* When RAMs and ROMs are good, "OK", "RAM OK" and "ROM OK" will appear.
* If RAM(s) is(are) not good, "RAM NG" and the problem will appear on the
  screen.
* If ROM(s) is(are) not good, "ROM NG" will appear on the screen.
When RAMs and ROMs properly work after this RAM ROM Tests, press
buttons A and B for 1p to go to the next test. In case any RAM(s) or ROM(s)
is (are) found faulty after the test, the test will be repeated.

3) Test Item Selection and Start

The following test items are shown so that you may select an item you want to
test by moving joystick up and down. Press button A to start the test of the
item indicated in green. Press buttons A and B to stop the test of the item.
1. IN PORT   ··· Test of dip swiches, buttons, etc.
2. SOUND   ··· Test of sound
3. CHARACTER   ··· Test of character display
4. SCREEN   ··· Test of color and distortion on monitor screen
5. OPTION   ··· Test of ticket dispenser
6. EXIT   ··· Stops the test mode

(1) IN PORT Test

This test shows the status which DIP Switches, Buttons and Joysticks are
turned "ON".

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
IN PORT1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
IN PORT2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
IN PORT3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

	1	2	3	4	5	6	7	8
DIP SW1	0	0	0	0	0	0	0	1
DIP SW2	0	0	0	0	0	0	0	0
DIP SW3	0	0	0	0	0	0	0	0

(0-OFF, 1-ON)

(2) SOUND Test

The screen shows the number of each sound and the test is done about whether the corresponding sound is given.
To carry out next sound test, move 1P joystick down.

SOUND ○ ○

(3) CHARACTER Test

The player character is displayed on the screen.

Normal position	Horizontally reversed
Vertically reversed	Horizontally and vertical ly reversed

Make sure that the same character is shown in four different positions, each vertically and horizontally reversed, as shown on the left.

(4) SCREEN Test

By pressing the 1P joystick, the test can be advanced like 1 - 2 - 3 - 4 - 5 - 6 - 7 - 8 - 9 - 10 - 1, test of colors, balance and distortion on the monitor screen.

1. The whole screen shows only BLUE color.
2.   "   RED
3.   "   MAGENTA
4.   "   GREEN
5.   "   CYAN
6.   "   YELLOW
7.   "   WHITE
8. Figure A is displayed on the screen.
9. Figure B is displayed on the screen.
10. Figure C is displayed on the screen.

Figure A

Black | Blue | Red | Magenta | Green | Cyan | Yellow | White

Color bars (in 16 grades)

RED   GREEN   BLUE   WHITE

Brighter

Figure B

Darker
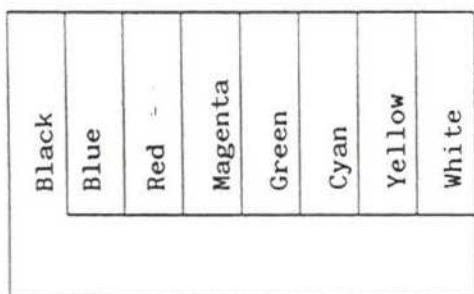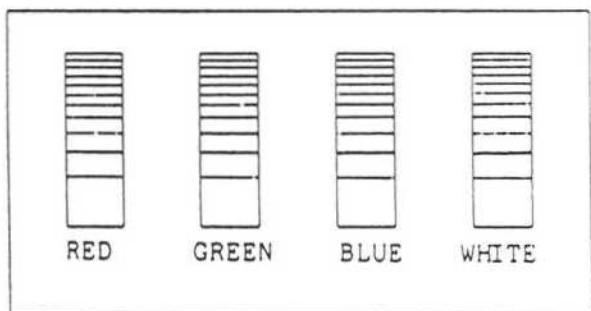
Crosshatch Pattern (drawn with 1-dot white lines)
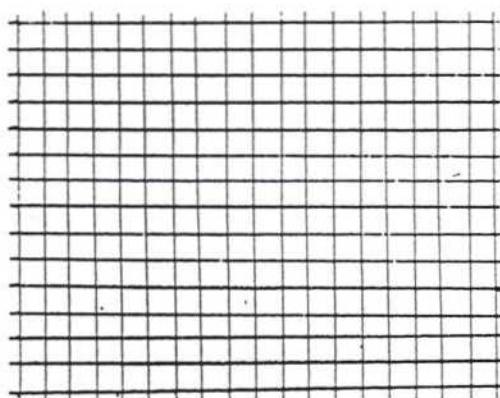
Figure C

15 lines

20 LINES

HORIZONTAL FREQUENCY   15.723KHz

H.PERIOD ··········· 63.6 μ sec

6.0 μ sec
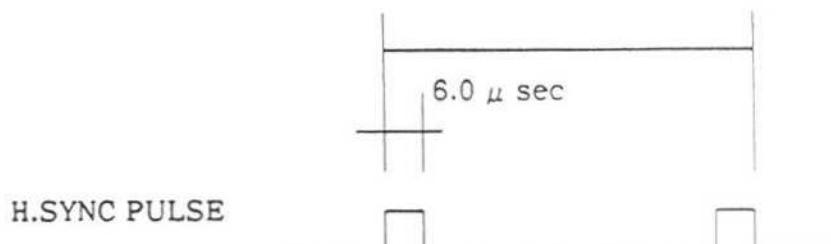
H.SYNC PULSE

H.BLANKING   4.8 μ sec

15.6 μsec

H.BLANK ········

VERTICAL FREQUENCY ∴············· 60.00Hz

V.SYNC PULSE   16.663msec

318 μ sec

V.BLANKING

512 μ sec

1.400m sec